



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,513	09/26/2003	Jean Steinmetz	Q77594	8638
23373	7590	03/16/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			ZHENG, LOIS L	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 03/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/670,513

Applicant(s)

STEINMETZ ET AL.

Examiner

Lois Zheng

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/26/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

1. Claims 10, 12 and 14-19 are amended in view of the preliminary amendment filed 26 September 2003. Therefore, claims 1-20 are currently under examination.

Specification

2. The amendment to the specification filed 26 September 2003 has been entered.
3. The replacement abstract filed 26 September 2003 has been entered.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 15 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. Claims 15 and 17 recite the limitation "said surface". There is insufficient antecedent basis for this limitation in the claim.
7. Claim 18 provides for the use of a method for temporary protection of metal surface against corrosion, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.
8. In claim 1, line 4, "by bring bringing" should be changed to "by bringing".
In claim 12, line 3 and claim 17, line 4, " 1.10^{-3} " should be changed to " 1×10^{-3} ".

In claim 14, "oxidising" should be changed to "oxidizing".

Claim Rejections - 35 USC § 101

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. Claim 18 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-2, 5, 8, 14 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Derule et al. US 5,683,751(Derule).

Derule teaches a process for treating galvanized steel surfaces with a coating solution comprising aliphatic monocarboxylic acid with 6-12 carbons, the solution having a pH of below 7 (abstract). An example of the monocarboxylic acid is heptanoic acid(col. 3 line 35), which is added, in example 2, as sodium heptanoate in the amount

Art Unit: 1742

of 0.04 mole/l(col. 4 lines 60-61). Derule further teaches that the treated steel sheet is oiled and rolled(i.e. formed/shaped)(col. 2 lines 44-49).

Regarding claims 1-2, 5, 8 and 19, the coating process as taught by Derule reads on the claimed coating process and the coating composition as taught by Derule also inherently reads on the claimed coating composition.

Regarding claim 14, Derule inherently teach the claimed oxidizing conditions since Derule teach the addition of the claimed organic acids.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 1-7, 10-11, 14, 16 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carson et al. US 4,720,405(Carson) in view of Derule.

Carson teaches a process for treating metal surfaces to form a protective coating(abstract, title). The coating composition comprises carboxylic acids such as azelaic acid, sebacic acid, decanoic acid and oleic acid(col. 3 lines 35-50). Carson also teaches that the coating composition can be applied to galvanized and/or aluminized steel surfaces(col. 7 lines 58-63). Carson further teaches that the coated metal substrate can then be fabricated into the desired article(col. 7 lines 8-15).

Regarding claim 1, the amount of carboxylic acid inherently taught in the coating composition of Carson would overlap the claimed carboxylic acid concentration of

Art Unit: 1742

greater than 0.1 mole/l. Therefore, a prima facie case of obviousness exists. See MPEP 2144.04. The selection of carboxylic acid concentration range from the inherently disclosed range as taught by Carson would have been obvious to one skilled in the art since Carson teaches the same utilities in its disclosed carboxylic acid concentration range. In addition, the concentration of Carson is a result effective variable. Therefore, one of ordinary skill in the art would have found it obvious to have routinely optimized the concentration of the carboxylic acids in order to achieve desired final coating properties.

In addition, one of ordinary skill in the art would have found the claimed treatment of metal surfaces before shaping obvious in view of Carson's teaching of fabricating the coated metal substrate since shaping is a form of fabrication.

However, Carson does not explicitly teach the claimed acidic pH of the coating composition.

Derule teaches a process for treating galvanized steel surfaces with a coating solution comprising aliphatic monocarboxylic acid, the solution having a pH of below 7 (abstract).

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated the acidic coating solution pH as taught by Derule into the coating composition of Carson in order to prevent corrosion on the exposed steel surfaces as taught by Derule(col. 2 lines 44-49).

Regarding claims 2-7, Carson in view of Derule teach the claimed saturated monocarboxylic acid, the claimed unsaturated monocarboxylic acid and the claimed saturated dicarboxylic acid.

Regarding claims 10-11, Carson further teaches that suitable solvent used in the coating composition may be diacetone alcohol(col. 7 lines 33-41).

Regarding claim 14, since Carson in view of Derule teach the claimed organic acids in the coating composition, the examiner asserts that the organic acids in the coating composition of Carson in view of Derule reads on the claimed chemical agent adapted to the metal to be treated, providing the claimed oxidizing conditions.

Regarding claim 16, even though Carson in view of Derule is silent about the claimed coating weight, one of ordinary skill in the art would have found it obvious to have routinely optimized the coating weight by varying the coating time depending on the thickness of the coating desired based on the type of application.

Regarding claims 19-20, Derule further teaches that the treated metal substrate can be oiled and rolled(col. 2 lines 44-49). Therefore, one of ordinary skill in the art would have found it obvious that the claimed subsequent oiling and shaping by any techniques, including stamping or rolling, can be applied to the process of Carson in view of Derule with expected success.

15. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carson in view of Derule, and further in view of Toman US 4,877,838 (Toman).

The teachings of Carson in view of Derule are discussed in paragraph 14 above. However, Carson in view of Derule do not explicitly teach the claimed heptanoic acid.

Toman teaches applying a protective coating to metal surfaces, wherein the coating composition comprises saturated monocarboxylic acids such as heptanoic acid, octanoic acid, nonanoic acid and decanoic acid, unsaturated monocarboxylic acid such as oleic acid and saturated dicarboxylic acid such as azelaic acid and sebacic acid(col. 6 line 55 – col. 7 line 11).

Therefore, one of ordinary skill in the art would have found the claimed mixed presence of both heptanoic acid and decanoic acid in the coating composition of Carson in view of Derule obvious since Toman appears to teach that heptanoic acid and decanoic acid are functionally equivalent.

16. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carson in view of Derule, and further in view of Hughes et al. US 6,206,982 B1 (Hughes).

The teachings of Carson in view of Derule are discussed in paragraph 14 above. However, Carson in view of Derule do not explicitly teach the addition of rare earth metals in the +3 oxidation state as claimed.

Hughes teaches the application of a conversion coating to metal surfaces, wherein the conversion coating comprises rare earth metals in +3 oxidation state(col. 3 line 61 – col. 4 line 15) and in a concentration of below 50g/l(col. 4 lines 24-26). The coating composition of Hughes further comprises mono- and/or di-carboxylic acids(col. 6 lines 53-49).

Regarding claim ¹²~~8~~, it would have been obvious to one of ordinary skill in the art to have incorporated rare earth metal in +3 oxidation state and in a concentration of below

Art Unit: 1742

50g/l as taught by Hughes into the coating solution of Carson in view of Derule in order to improve the adhesion of the conversion coating and accelerate the coating process as taught by Hughes(col. 2 lines 1-3).

In addition, the concentration of rare earth metal in the coating composition of Carson in view of Derule and Hughes overlaps the claimed concentration of greater than or equal to 1×10^{-3} mole/l. Therefore, a prima facie case of obviousness exists. See MPEP 2144.04. The selection of claimed rare earth metal concentration range from the disclosed range of Carson in view of Derule and Hughes would have been obvious to one skilled in the art since Carson in view of Derule and Hughes teach the same utilities in their disclosed rare earth metal concentration range.

Furthermore, the pH of the coating solution of Carson in view of Derule and Hughes overlaps the claimed pH of higher than 4. Therefore, a prima facie case of obviousness exists. See MPEP 2144.04. The selection of claimed pH range from the disclosed range of Carson in view of Derule and Hughes would have been obvious to one skilled in the art since Carson in view of Derule and Hughes teach the same utilities in their disclosed pH range.

Regarding claim 13, even though Carson in view of Derule and Hughes do not explicitly teach that the rare earth metal is claimed gadolinium, one of ordinary skill in the art would have found the use of gadolinium as the rare earth metal in the coating composition of Carson in view of Derule and Hughes obvious and with expected success since gadolinium has similar properties as other rare earth metals, therefore, should behave similarly to other rare earth metals taught by Hughes.

Art Unit: 1742

17. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carson in view of Derule, and further in view of Emmonds et al. US 6,676,820B2(Emmonds).

The teachings of Carson in view of Derule are discussed in paragraph 14 above. However, Carson in view of Derule do not explicitly teach the claimed oxidizing condition caused by an electric current with metal surface and at least one electrode being immersed.

Emmonds teaches a process for electrocoating metal blanks by immersing metal blanks and electrodes in an electrolytic coating bath(Fig. 2).

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated the electrodeposition process as taught by Emmonds into the coating process of Carson in view of Derule in order to achieve increased paint utilization, improved corrosion protection and low environmental contamination as taught by Emmonds(col. 1 lines 19-26).

18. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carson in view of Derule, and further in view of Melotik US 3,969,152(Melotik).

The teachings of Carson in view of Derule are discussed in paragraph 14 above. However, Carson in view of Derule do not explicitly teach the claimed post treatment using a bath containing rare earth metals.

Melotik teaches an post treatment rinse for metal coatings, wherein the post treatment rinse solution is comprises at least 0.0005M of rare earth metal(col. 3 lines 20-27). Table II of Melotik further shows that an example of rare earth metal salt is cerous nitrate(i.e. Ce^{3+}).

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated the post treatment coating process of Melotik into the coating process of Carson in view of Derule in order to substantially increase the corrosion and humidity resistance of conversion coated metal surfaces and to improve the surface's receptivity to subsequent adherent coats of paint as taught by Melotik(col. 1 lines 42-59).

In addition, the rare earth metal concentration in the post treatment solution as taught by Carson in view of Derule and Melotik overlaps the claimed rare earth metal concentration of greater than or equal to 1×10^{-3} mole/l. Therefore, a prima facie case of obviousness exists. See MPEP 2144.04. The selection of claimed rare earth metal concentration range from the disclosed range of Carson in view of Derule and Melotik would have been obvious to one skilled in the art since Carson in view of Derule and Melotik teach the same utilities in their disclosed rare earth metal concentration range.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lois Zheng whose telephone number is (571) 272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1742

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LLZ

ROY KING 
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700